Gill Tremlett.

EXPANDED PROGRAMME ON IMMUNIZATION

TRAINING COURSE ON PLANNING AND MANAGEMENT

GILL TREMLETT

Introduction

Murphys law
if anything can go wrong it will.
Soods law
Murphy was an optimist

WORLD HEALTH ORGANIZATION

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INTRODUCTION

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INTRODUCTION

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INTRODUCTION

COURSE DESCRIPTION

Immunization is considered by many countries to be an essential component of primary health care. You have come to this management training course because your country is currently operating an expanded programme on immunization or because it has expressed an interest in beginning such a programme. In response to that interest, this course will assist you in making the numerous decisions which are critical to the effective and efficient management of an immunization programme within the context of primary health care. You have probably brought with you much knowledge of the diseases preventable by immunization which occur in your country, as well as a concern for the unnecessary morbidity and mortality which result from them.

We share your concern and look forward to exchanging ideas on the complicated and sometimes controversial issues which are involved in managing an immunization programme. We do not have all the answers, and we do not expect you to have them all. By sharing ideas, knowledge, and experience, decisions can be made which are both rational and practical. They must be considered tentative decisions to be revised based on changing assessments of your country's needs, new scientific breakthroughs, and additional data on the nature of the diseases in question.

ORGANIZATION OF THIS COURSE

How does this course differ from traditional training courses?

- Each participant at the course is provided with a set of booklets called "modules" that serve as the primary subject matter resource on management of national immunization programmes. Additional resources are available in the form of a bibliography and technical experts.
- The materials are designed to assist each participant in developing specific skills. These skills are developed by asking the participant to apply new knowledge to exercises provided in the modules and to situations presented in group discussions.
- Each participant is encouraged to work at his own pace within the time limits of the course.
- Each participant is encouraged to discuss any problems or questions with a Course Facilitator and to receive prompt feedback from the Course Facilitator on completed exercises (that is, to be told how well he or she has done the exercise and what improvements could be made).

What is a Course Facilitator?

As the name implies, a Course Facilitator is one who assists the participants in a training course in learning the skills presented in the course materials, usually through individual discussions. He or she is one of several sources of instruction; other sources include the modules, the bibliography, technical experts, and other participants in the course. Skills, knowledge, or experiences in the subject being taught enable a Course Facilitator to better explain ideas, lead discussions, and help participants learn the skills. However, because modules are the primary resource for the course, a Course Facilitator is not expected to teach the course through formal lectures or other traditional teaching methods.

What course materials will be used?

This course consists of a series of 6 modules. Each module is designed to provide the information and skills you will need to perform particular tasks necessary to establish and manage an immunization programme in your country. Each module contains written exercises to allow you to practice what you learn. You will work through all of the modules, one at a time. The titles of the modules are:

National Priorities
Disease Estimates
Regional Priorities
Programme Targets
Programme Design
Surveillance

In addition to the modules in the senior-level management course listed above, there are other modules which will be used in this course. These other modules will describe tasks which may be performed by a national manager but are more typically performed by a mid-level manager of an immunization programme (for example, managers at the regional, district and/or health centre levels). It is hoped that by practicing certain mid-level management tasks, you will be better able to effectively supervise the performance of those tasks, to identify tasks which are not being performed adequately, and to take prompt corrective actions to improve performance.

The tasks described in the mid-level modules are:

Allocate Resources
Manage the Cold Chain System
Conduct Vaccination Sessions
Evaluate Vaccination Coverage
Supervise Performance
Provide Training
Conduct Disease Surveillance
Ensure Public Participation

Because time available for this course is limited, you will work through all of the senior-level modules but only those mid-level modules or parts of mid-level modules which are most appropriate for your country. You may wish to complete the remaining mid-level modules at a later time.

This booklet, Introduction, contains a section entitled "Fictitia", which begins on page 5. The section describes an imaginary country called Fictitia and provides information on its population, its leading causes of morbidity and mortality, its health care system, and its health care plans. For the purposes of the exercises in this course, you will be the national manager of Fictitia's Expanded Programme on Immunization. Fictitia will differ from your country in many ways. However, using data on Fictitia to work through the exercises will help you develop the skills necessary to perform similar tasks using data from your own country.

During the course you will often be instructed to refer to specific sections in the description of Fictitia to obtain data needed to complete the exercises. When you are referred to these sections later, read and study them carefully. For now, briefly review the section headings in the description to familiarize yourself with the kind of information included.

In this booklet there is also a glossary of terms that are used in the modules of the course. You should refer to the glossary, which begins on page 27, whenever you read an unfamiliar term.

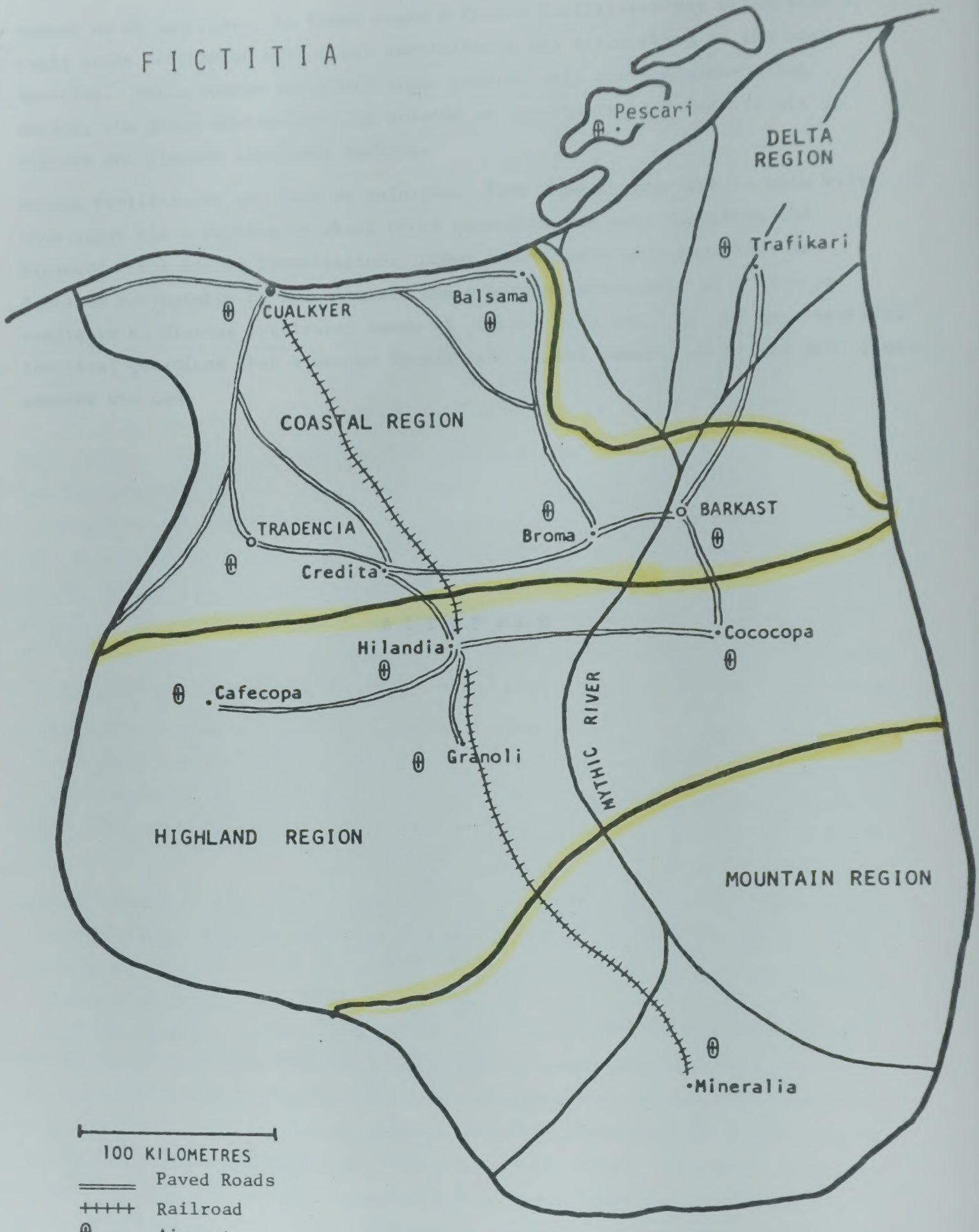
How will the course proceed?

This course is designed to combine individual work with small group discussions. You will be assigned to a small group with one or two Course Facilitators. In general, you will begin each module by reading it and working through the practice exercises provided. At the end of each exercise, or as you have questions, you will consult a Course Facilitator who will review your answers with you and help resolve any questions you may have. Frequently, there will be no single right

answer to an exercise. In these cases a Course Facilitator may often lead a small group discussion with other participants who are working on the same exercise. While course materials often present only one decision-making method, the group discussion will provide an opportunity for individuals to suggest and discuss alternate methods.

Course Facilitators are here to help you. Feel free at any time to talk with them about the materials or about other questions you have regarding the Expanded Programme on Immunization. Other individuals with expertise in diseases preventable by immunization and programme management will also be available to discuss particular areas of concern with you. If you have specific technical questions that a Course Facilitator cannot answer, he or she will find someone who can.

F I C T I T I A


FICTITIA
Pescari
DELTA REGION
Trafikari
CUALKYER
Balsama
COASTAL REGION
BARKAST
TRADENCIA
Broma
Credita
Cococopa
Hilandia
Cafecopa
MYTHIC RIVER
Granoli
HIGHLAND REGION
MOUNTAIN REGION
Mineralia
100 KILOMETRES
Paved Roads
Railroad
Airport

DEMOGRAPHIC DATA

Fictitia is a country of 16 million population (1980 census) in an area of 245,000 km^2. The country is divided into 4 regions, each with distinct geo-climatic features: (A) Delta - a low-lying delta area accessible only to small and medium-sized boats; (B) Coastal - a tropical fertile coastal plain; (C) Highland - a highland plateau; and (D) Mountain - a mountainous area.

POPULATION BY AGE, SEX AND REGION (1980 CENSUS)

Age	Sex	Delta	Coastal	Highland	Mountain	TOTAL
0-4 years (18.4%)	Male	93,550	935,625	374,250	93,550	1,496,975
	Female	90,450	904,375	361,750	90,450	1,447,025
	TOTAL	184,000	1,840,000	736,000	184,000	2,944,000
5-14 years (31.6%)	Male	158,625	1,586,250	634,500	158,625	2,538,000
	Female	157,375	1,573,750	629,500	157,375	2,518,000
	TOTAL	316,000	3,160,000	1,264,000	316,000	5,056,000
15-44 years (45.0%)	Male	212,500	2,125,000	850,000	212,500	3,400,000
	Female	237,500	2,375,000	950,000	237,500	3,800,000
	TOTAL	450,000	4,500,000	1,800,000	450,000	7,200,000
45+ years (5.0%)	Male	21,875	218,750	87,500	21,875	350,000
	Female	28,125	281,250	112,500	28,125	450,000
	TOTAL	50,000	500,000	200,000	50,000	800,000
TOTAL POPULATION		1,000,000	10,000,000	4,000,000	1,000,000	16,000,000

Birth Rate (Live Births) . . . . . 40/1000 population
Crude Death Rate . . . . . 20/1000 population
Infant Mortality Rate (<1 year old) . . . 100/1000 live births
Under 5 Mortality Rate . . . . . 50/1000 population under 5

POPULATION DISTRIBUTION AND DENSITY

	Delta	Coastal	Highland	Mountain	TOTAL
Cities > 500,000	(0)	(3) 2,040,000	(0)	(0)	(3) 2,040,000
Cities 100,000 - 500,000	(2) 211,000	(3) 1,250,000	(4) 1,000,000	(1) 102,000	(10) 2,563,000
Towns 15,000 - 100,000	(5) 280,000	(30) 1,800,000	(12) 700,000	(3) 130,000	(50) 2,910,000
Villages	(204) 509,000	(1894) 4,910,000	(926) 2,300,000	(512) 768,000	(3536) 8,487,000
Area (km^2)	35,000	70,000	70,000	70,000	245,000
Population Density	29/km^2	143/km^2	57/km^2	14/km^2	65/km^2

Percentage of Population Living in Urban Areas 47%
Percentage of Population Living in Rural Areas 53%

Cities > 500,000

Name	Population	Significance	Industry	Other Features
Cualkyer •	990,000	National Capital	Aluminum, Brewery, Cement, Matches, Soap	Major Port, International Airport
Tradencia •	540,000	Agricultural Centre	Marketing	
Barkast •	510,000	Site of Major Dam	Hydroelectric	

Cities 100,000 - 500,000

Name	Population	Region	Significance
Pescara	101,000	Delta	Fishing Centre
Trafikari	110,000	Delta	Port (Lagoon Traffic)
Balsama •	390,000	Coastal	Port
Broma •	450,000	Coastal	Textiles
Credita •	410,000	Coastal	Agricultural Banking Centre
Cafecopa	225,000	Highland	Coffee Centre
Cococopa	175,000	Highland	Agriculture
Granoli	300,000	Highland	Agriculture
Hilandia	300,000	Highland	
Mineralia	102,000	Mountain	Mining Centre

	Delta	Coastal	Highland	Mountain
Altitude (m)	0-30	20-100	80-2,000	1,500-5,000
Temperature (C)	+30 to +45	+25 to +38	+15 to +30	-10 to +25
Rainfall (cm)	180-200	70-150	40-80	10-20
Predominant Transportation	Boat	Bus, Car	Bus, Jitney	Foot
Geography	Islands Swamps Rivers	Farms Rivers Forests	Plateaux Rolling Hills	Mountains High Valleys
Population	Scattered	Dense	Medium Dense	Sparse
	Fishermen Boat-Dwellers Smugglers	Labourers Gov't. Workers Farmers	Farmers Livestock Breeders Nomads	Hunters Insurgents Miners
Industry	Fishing Smuggling	Farming Commerce Heavy Industry	Farming Livestock Light Industry	Mining (asbestos)
Literacy Rate (Adults)	15%	40%	25%	10%
% of Children, Age 6-11, in School	40%	85%	60%	20%
Communications				
Radio Receivers per 1,000 pop.	50	100	75	50
Telephones per 1,000 pop.	0.5	30	10	0.1
Paved Roads (km)	100	3,000	300	None
All Weather Roads (km)	250	5,400	3,500	200
Railroad	From Mineralia to Cualkyer			
Airstrips	2	5	4	1

ESTIMATED ANNUAL MORBIDITY AND MORTALITY IN CHILDREN UNDER AGE FIVE DURING 1978-1980

In February 1981 the Survey Department, Ministry of Health, and the School of Medicine estimated the morbidity and mortality by cause in children under age 5 in Fictitia. Using the 1980 population estimates obtained from the census, they estimated the number of deaths in children under 5 years of age by multiplying the population under 5 years of age times the annual under 5 mortality rate (2,944,000 x 50/1000 = 147,200 deaths in children under age 5).

The next step was to obtain data on 5,000 deaths in children under age 5 during 1978-1980 in urban areas with good reporting and in rural areas with special surveillance programmes to determine the relative distribution of these deaths by cause. Using the relative distribution by cause, they estimated the annual number of deaths due to each cause during the period. The results are shown in the table below.

Using data from previous outbreak investigations, from regional World Health Organization (WHO) studies of disease-specific case fatality rates, and other available data, they estimated the annual number of cases of each disease which probably occurred. The case fatality rates and estimated number of cases are also shown in the following table.

ESTIMATED ANNUAL MORBIDITY AND MORTALITY
UNDER 5 YEARS OF AGE

Fictitia 1978-1980

Cause	Number and Percent (%) Distribution of Survey Deaths, by Cause	Estimated Annual Number of Deaths	Estimated Case Fatality Rate (%)	Estimated Annual Number of Cases
Accidents	171 (3.4)	5,052	1	505,200
Diarrhoea	1,710 (34.2)	50,340	0.9	5,593,333
Diphtheria	82 (1.6)	2,402	10	24,020
Lower Respiratory Infection	616 (12.3)	18,147	1	1,814,700
Malaria	253 (5.1)	7,454	10	74,540
Measles	599 (12.0)	17,638	3.75	470,347
Neonatal Tetanus	428 (8.6)	12,596	85	14,819
Other Neonatal Conditions	298 (6.0)	8,779	50	17,558
Pertussis	253 (5.1)	7,444	1.5	496,267
Poliomyelitis	42 (0.8)	1,225	10	12,250
Skin Infection	42 (0.8)	1,225	0.2	612,500
Tuberculosis	20 (0.4)	588	20	2,940
Undernutrition	253 (5.1)	7,444	5	148,880
Unknown/Other	233 (4.7)	6,866	-	N/A
TOTAL	5,000 (100.0)	147,200		

LEADING CAUSES OF MORBIDITY AND MORTALITY

The following general information about the leading causes of morbidity and mortality was compiled by staff in the Ministry of Health. The information about possible measures for control of these causes is based on experience of other countries considered similar to Fictitia.

ACCIDENTS

About 10% of accidents (burns, injuries, drownings) result in long-term disability, primarily crippling. Since prevention depends largely on long-term education and economic development, emphasis is usually on treatment (first aid, medical diagnosis and treatment, rehabilitation). An extensive network of health facilities is required for effective treatment. Severe cases need extended hospital care, making the cost of treatment very high. It is estimated that 8 in 10 children will have an accident before they reach 5 years of age.

DIARRHOEA

Acute diarrhoeal illness lasts up to 3 weeks, and is more serious when combined with undernutrition. Recurrent diarrhoeal episodes contribute to significant long-term undernutrition. When death occurs, it is usually the result of dehydration. Diarrhoea can be prevented with improved sanitation, water supply, and domestic hygiene. However, these preventive measures are expensive and the extent of their effectiveness has not yet been determined. Oral rehydration (OR) therapy can effectively prevent death in about 2/3 of watery diarrhoea cases. OR solution must be administered throughout the duration of the diarrhoea episode, and may be difficult to administer, especially if the child is vomiting. Mothers as well as health workers must be trained in its preparation and use. Intravenous (IV) therapy, as a backup to OR therapy, is appropriate in treating severely dehydrated cases, but must be given in health facilities. The cost to treat one case with OR therapy is about U.S. $0.76. The cost to treat a case with only IV therapy is at least U.S. $75. Most children have approximately 2 cases of diarrhoea per year.

DIPHTHERIA

Diphtheria lasts 2 to 4 weeks, with a moderate chance of longer-term disability. Death may occur as a result of respiratory obstruction, or cardiac damage. The same vaccine, DPT, is used to prevent diphtheria, pertussis, and non-neonatal tetanus. The vaccine is highly effective in preventing diphtheria, but its effectiveness depends upon the administration of at least 2 doses early in life before the disease occurs, a working cold chain system, and public acceptance of the vaccine. Public acceptance of second and third doses can be reduced because of reactions to the vaccine, such as soreness or fever. The combined cost to protect one child from diphtheria, pertussis, and non-neonatal tetanus with 3 doses of DPT vaccine is U.S. $3.12. Diphtheria can also be treated with antitoxin and antibiotics, at a cost of U.S. $100-$1000 per case, with moderate success in preventing disability.

LOWER RESPIRATORY INFECTION

Duration is usually 1 to 3 weeks, with a small percentage of cases developing complications (chronic lung disease, asthma, bronchitis). Complications may lead to long-lasting disability. There are no effective preventive measures. A majority of cases respond satisfactorily to simple therapy (at a cost of U.S. $2.00 - $20.00 per case). However, some cases require highly skilled medical care and more expensive treatment. Many infections in these cases recur 2 or 3 times even with treatment. Careful follow-up is therefore required to ensure the effectiveness of treatment, making control of these infections difficult, time-consuming, and costly. On the average, children develop 3 episodes of lower respiratory infection before they reach the age of 5.

MALARIA

The disease lasts from 1 to 2 weeks, with disability lasting until treatment with drugs is provided. Recurrent malaria may have a significant long-term effect on an individual's general health and development. The most effective approach to the prevention of malaria is a combination of continuous drug prophylaxis and mosquito control. Drug prophylaxis with chloroquine costs about U.S. $5.50 per year per person. The drug must be taken weekly, and is highly effective unless the type of malaria in the area is chloroquine-resistant. Dependable delivery systems for continuous drug prophylaxis have proven difficult to develop and maintain. Spraying mosquito-infested areas as a preventive measure may be expensive, difficult to organize, and poorly accepted by the public. The effectiveness of mosquito control depends on the ecology and terrain of the area. Drug treatment for acute illness, which may be required 1-2 times per year in children, takes several days but is effective. There are no complications associated with treatment, and the cost is U.S. $0.50 - $1.00 per case. Once people learn that treatment is effective, they will generally seek it when necessary. It has been noted that most people are more likely to wait for the disease to occur and treat it than to take preventive action.

MEASLES

Measles lasts 2 to 3 weeks with many cases developing complications (diarrhoea, undernutrition, secondary pneumonia) which may last an additional 2 to 4 months. The disease and its complications are most severe among children who are already undernourished. Measles vaccine is 95% or more effective, and is moderately stable. Reactions to the vaccine are few and are usually limited to slight fever and occasionally a very mild rash. One dose of measles vaccine is required at or soon after 9 months of age, at a total cost to administer of about U.S. $1.15. As with other vaccines, an adequate cold chain and trained personnel are essential for effective use. Treatment of measles complications costs U.S. $100 -$400 per hospitalized case, and is not very effective.

NEONATAL TETANUS

Neonatal tetanus lasts 1 to 3 weeks and 85% of cases result in death. If the child survives the disease, however, there is usually no long-term disability. The disease can be effectively prevented by administering tetanus toxoid vaccine to the mother during pregnancy. Two doses of vaccine are required, about 4 weeks apart and beginning at least 8 weeks before delivery. The vaccine is stable and 95% effective, but its effectiveness depends on the success of efforts to encourage the mother to get both shots before delivery and a working cold chain system. The cost to provide 2 doses to one mother is estimated at U.S. $1.00 - $3.00. Treatment of a neonatal tetanus case requires intensive hospital care, is about 40% effective in preventing death, and is extremely expensive.

OTHER NEONATAL CONDITIONS

Neonatal conditions other than tetanus include congenital abnormalities, birth injuries, and septicemia. Chances of lifelong disability are about 50%. Prevention consists of supplying prenatal care and delivery care, especially to high-risk mothers. This is often difficult and time-consuming, as it involves extensive training of traditional birth attendants and other prenatal care providers. Three prenatal visits for a mother are usually required, at an estimated cost of U.S. $1.00 per visit. Delivery care is estimated to cost U.S. $4.00 - $8.00. These two forms of care can be expected to reduce other neonatal conditions by 50%. Treatment of other neonatal conditions is frequently ineffective in preventing death or disability, and is extremely expensive, as specialized hospital care is needed.

PERTUSSIS

Pertussis lasts 1 to 2 months, with a moderate number of cases developing complications (bronchopneumonia and undernutrition) which may last up to 6 months. The same vaccine, DPT, is used to prevent pertussis, diphtheria, and non-neonatal tetanus. The vaccine is 80% effective in preventing pertussis, but its effectiveness depends upon the administration of 3 doses early in life before the disease occurs, a working cold chain system, and public acceptance of the vaccine. One or 2 doses are partially protective. Children may get fevers or soreness as a reaction to the vaccine. The combined cost to protect one child from pertussis, diphtheria, and non-neonatal tetanus with 3 doses of DPT vaccine is U.S. $3.12. Pertussis can be treated with antibiotics, but the cost is high and the effectiveness quite low.

POLIOMYELITIS

Duration of the disease is 2 to 4 weeks, but disability may last much longer, with a 75% chance of long-term paralysis, particularly of one or both legs. Three doses of oral polio vaccine are recommended to prevent the disease. Although vaccine efficacy in terms of producing serologic conversion is somewhat reduced in tropical countries, high coverage can interrupt transmission in urban areas. Because the vaccine is oral, it is easy to administer. Complications from the vaccine are very rare. To remain potent, the vaccine must be refrigerated. Cost per child to prevent the disease is U.S. $3.30. Treatment, which is expensive (U.S. $100 - $1000 per case), involves rehabilitation, including repeated orthopedic surgery and continuous physiotherapy. Often lifelong walking aids are required. Paralysis of the respiratory muscles necessitates artificial ventilation.

SKIN INFECTION

Most skin infections can be prevented with good hygiene (soap and water), and thus effective health education is required. Cases can be treated with drugs, which are often expensive (up to U.S. $15 per case) and only moderately effective. Children will get a skin infection and require treatment at least one time during their first 5 years. Once a case is treated, however, disability is rare. In most untreated cases, chronic irritation will continue, and in some cases, disseminated infection will occur.

TUBERCULOSIS

Tuberculosis is a chronic disease. Untreated, the disease and its disability can result in significant mortality. Frequent causes of disability include miliary tuberculosis, meningitis, osteomyelitis, and cavitary lung disease. Diagnosis and treatment of tuberculosis require diagnostic facilities and prolonged chemotherapy. Prevention of tuberculosis consists of administering one dose of BCG vaccine to newborns at birth, at a total cost of U.S. $1.00 - $2.00 per case. The degree of effectiveness of the vaccine is uncertain, however. The vaccine causes a small ulcer at the site of injection which heals within a few weeks. Swelling of lymph glands near the injection site may also occur. Treatment costs U.S. $50 - $200 per case.

Undernutrition is a long-term problem. It may permanently affect growth and development, decreases a child's ability to resist and fight infections, and increases the risk of death 6 times. While prevention need not be expensive where adequate food is available, in much of the world adequate food supplies are hard to find. The best preventive measure, given adequate food supplies, is education on breastfeeding, weaning, and proper diet. Child spacing, that is, the practice of spacing pregnancies a few years apart, is one method of reducing undernutrition in young children. Treatment of undernutrition, which consists of therapeutic feeding, requires careful management, is expensive, and may not prevent death or disability. Some children will require treatment multiple times during their first 5 years.

PUBLIC PERCEPTION OF HEALTH PROBLEMS

In 1979, in a small knowledge, attitude, and practice survey conducted by the University, the public was found to consider the most important health problems for children to be measles, polio, neonatal tetanus, and diarrhoea. Pertussis, malaria, lower respiratory infections, and undernutrition were also felt to be important. Other health conditions were not mentioned by a significant portion of the population. In general the public was not well informed about control measures, with the exception of immunizations. Past immunization campaigns have shown high levels of initial response (60-80%) with a decrease on follow-up rounds (20-50%).

While the smallpox eradication programme convinced many people that the Ministry of Health had a valuable service to offer, the opinion of people, particularly mothers, on the usefulness of health centres, is strongly divided. While many people report having had good experiences at the health centre, many others complain about long waiting times, unsympathetic workers, and ineffective care. In general, people will go to the health centre when they are sick in order to receive some specific care. They are much less likely to go when they are not sick, or when they think traditional cures are more likely to be effective. There are accepted traditional ways of treating diarrhoea, fevers, coughs, and skin infections. There are also strongly held beliefs on the most appropriate food to give children.

In the past, publicity campaigns have been effective for short periods of time if the message is short and precise. More general health education publicity campaigns on diet, accident prevention, and sanitation have had no visible effect.

The government of Fictitia is strongly committed to the development of primary health care and to the improvement of the health of all its citizens by the year 2000. The precise manner in which primary health care will be developed over the long term has not been fully planned. The government has written a national "Five Year Plan," which consists of a number of goals the government hopes to achieve by 1987. The plan includes health-related goals for diarrhoeal disease control, childhood immunization, safe water, family planning, and maternal and child health services. To further show its commitment to these services, the government has appropriated money for the first 5 years of each programme, and has appointed national managers for the diarrhoeal disease control, childhood immunization, and family planning programmes.

Considerable public interest has been expressed in the Coastal and Highland Regions in both childhood immunization and diarrhoeal disease control. There has already been strong impetus in these two regions to develop immunization activities. In the Delta and Mountain Regions, health authorities have shown less interest in new activities, primarily because of their concern that there may not be adequate budgetary and supervisory support available. While the central government is determined that the less developed regions (Delta and Mountain) should be given special consideration in future development activities, it also recognizes that health care should be first applied in those areas where success is most likely.

Fictitia has 203 primary reporting units (the hospitals and health centres) which report morbidity and mortality figures monthly to the Statistical Unit, Public Health Directorate, Ministry of Public Health, Cualkyer.

A summary of the number of reports received by the Statistical Unit in 1979 (1980 data not yet available) reveals an overall reporting efficiency of 23.5 percent.

Reports	Regions				
	Delta	Coastal	Highland	Mountain	Total
Expected	72	1,920	408	36	2,436
Received	12	504	54	3	573
Percent	16.7	26.3	13.2	8.3	23.5

EXCERPTS FROM THE NATIONAL FIVE-YEAR PLAN

Early in 1981, Fictitia undertook a national "Five-Year Plan," consisting of a number of goals the government hopes to achieve by 1987. Health-related goals that are part of the Five-Year Plan include:

- Building 30 new health facilities in underserved areas, which include one new hospital (in the Highland Region) and 29 new health centres. The 299 facilities existing in 1980 will continue to provide services.
- Upgrading 50% of the present facilities to provide improved services at the facilities and more support for village health workers (VHW's).
- Doubling the number of village health workers in the country (that is, increasing the number of VHW's from 1,350 in 1980 to 2,700 by 1987).
- Making routine immunizations available to all children in the country.
- Extending family planning programmes throughout the country, and achieving a 10% decline in the birthrate.
- Improving child care practices, particularly by encouraging breastfeeding.
- Supplying all health facilities and village health workers with oral rehydration salts (ORS) for use in providing OR therapy.
- Increasing access to safe water by building or improving wells and latrines to serve 50% of the population.

CURRENT HEALTH CARE DELIVERY SYSTEMS

The following information on the delivery systems which currently provide health care and other social services to the public was compiled in order to assess their potential for delivering various primary health care services:

1. Health Facility System (Hospitals, Health Centres, and Dispensaries)

   Each region has its own health service which is responsible for all preventive programmes in that region, and its own regional hospital. All of the hospitals have microbiology laboratories, and provide both inpatient and outpatient care. Outpatient preventive and curative services are also provided through health centres and dispensaries. The typical health centres have a full-time physician. Occasionally physicians will visit centres to supervise operations. Dispensaries are generally one-room facilities run by an auxiliary nurse-midwife. Over the last 5 years, as health centres have been built, the number of dispensaries has declined.

   A survey of records from health facilities indicates that approximately 500,000 children under age 5 (which is less than one-fifth of all children under age 5) received at least one service from a health facility during 1980.

   The health facility supervisors are proud of their success in treating severe dehydration due to diarrhoeal disease with IV therapy. Health facilities are, in general, adequately staffed to permit the addition of immunization and OR therapy to their other responsiblities.

   Each region maintains its own stores of vaccines, drugs, and other health care supplies. Each of these stores is resupplied on a quarterly basis. Health centres are supplied monthly from the regional centres. Dispensaries draw their supplies from health centres as needed.

HEALTH FACILITIES AND THEIR SERVICE POPULATION IN 1980

	Delta	Coastal	Highland	Mountain	Total (T) Average (A)
Health Facilities:	17	218	51	13	(T) 299
Hospitals	4	20	8	2	(T) 34
Health Centres and Dispensaries	13	198	43	11	(T) 265
% of Population within 5 km of a Facility	30%	55%	40%	10%	(A) 47%
Total Population within 5 km of a Facility	300,000	5,500,000	1,600,000	100,000	(T) 7,500,000
Total Women Age 15-44 within 5 km of a Facility	71,247	1,306,256	380,001	23,751	(T) 1,781,255
Total Children under Age 5 within 5 km of a Facility	55,200	1,012,000	294,400	18,400	(T) 1,380,000

HEALTH FACILITY PERSONNEL

	Delta	Coastal	Highland	Mountain	TOTAL
Doctors (Government Service)	24	200	80	12	316
Nurses	100	1,200	500	40	1,840
Auxiliary Health Personnel	450	6,200	2,200	240	9,090

2. Village-Based System

In Fictitia, some village populations receive their only health care from a village resident. Sometimes this village resident is one who has had health training, such as a Village Health Worker. Other villages depend on respected persons such as teachers who have no health training.

- Village Health Workers

Village Health Workers are village residents who are selected by village leaders to be trained to provide basic health care. A Village Health Worker's responsibilities include (a) recognizing common diseases and their causes; (b) providing simple treatment, and advising village residents on first aid, nutrition and feeding programmes, immunizations, healthy home deliveries, health education, and family planning; (c) referring cases, when necessary, to a health facility; and (d) keeping simple records of births, pregnancies, and deaths to help in the evaluation of the effect of various programmes on the village. Though it may not be realistic to expect all Village Health Workers to be able to perform all these duties, the services they do provide are generally effective and are appreciated by the village residents. The Village Health Workers are assigned responsibility for a certain population, often an entire village. They obtain support, such as supervision, training, and supplies, through visits to a nearby health facility or from outreach workers from that facility. They are expected to be enthusiastic about activities which will reduce childhood mortality and which can be carried out with a minimum of outside support.

Estimates based on amounts of supplies used suggest that about 200,000 children received some service from Village Health Workers during 1980.

VILLAGE HEALTH WORKERS AND THEIR SERVICE POPULATION

	Delta	Coastal	Highland	Mountain	TOTAL
Village Health Workers	42	980	276	52	1,350
Total Population Responsibility of VHW	104,790	2,540,160	685,584	78,000	3,408,534
Total Population under Age 5 Responsibility of VHW	19,278	467,460	126,132	14,352	627,222
Total Women Age 15-44 Responsibility of VHW	24,948	604,660	163,116	18,564	811,288

- Traditional Birth Attendants

Traditional birth attendants (TBA) live and work in their villages, providing care to some mothers during pregnancy and during delivery. They are also looked to for advice on care of newborns and infants.

A portion of women in a village will utilize the services offered by TBA's. Although most village residents believe more effective care can be obtained

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from a health facility, some women prefer to receive services from a village resident. Most TBA's learned their trade from another TBA. Government efforts to train TBA's in improved delivery techniques have been largely unsuccessful because the TBA's are generally very reluctant to change practices which have been accepted for many years.

- Teachers

Primary education has been recognized as a priority in Fictitia, and the Ministry of Education has a comparatively generous budget. 100% of the towns and cities and over 50% of all villages in the country have at least primary schools. The Coastal Region, in particular, has emphasized education as a priority, with 85% of the children in that region enrolled in primary school, compared to 60% or less of the children in the other regions.

At the present time, there are no cooperative programmes between the Ministries of Health and Education, and health is not taught as a subject. Regular discussions have been held between the two ministries, but no changes in the curriculum have been made thus far.

	Delta	Coastal	Highland	Mountain	Total
Teachers	700	14,800	4,200	350	20,050

- Religious Leaders

Traditional religious leaders have great influence in Fictitia, particularly in the rural areas. All villages have recognized religious authorities, and their advice is sought by the population on all social matters.

The cooperation of these authorities was important in Fictitia's smallpox eradication programme, and the expanded programme on immunization has been having great success in involving them in planning and promotion. Along with civil authorities such as village heads, religious leaders determine who will be appointed to be trained as a Village Health Worker.

4. Outreach System

- Immunization Workers

The Expanded Programme on Immunization (EPI) is at an early developmental stage. In addition to providing immunizations at health facilities, the EPI also utilizes outreach workers who travel to villages to administer vaccine to children. Since surveillance is not yet well developed, it

has been difficult to measure changes in morbidity and mortality. While Village Health Workers will not offer vaccines routinely, it is hoped that they will help with health education. In some areas, the programme has been successful in developing vaccine logistics systems, and testing of vaccine indicates that the cold chain is functioning effectively.

- Malaria Control Workers

  Malaria control in Fictitia has been going on for a number of years. Periodic spraying of urban areas with insecticide occurs, and treatment of acute malarial fever is offered at all health centres. Despite these efforts, reported morbidity and mortality due to malaria have increased gradually over the last 10 years.

- Maternal and Child Health Workers

  Maternal and child health is an important part of the health centre activity. This includes encouraging better nutrition, increased breastfeeding, longer weaning periods, and child spacing. Many of the health centre staff feel that maternal and child health is their most important responsibility, and in many of the centres good relationships have been established with the population. In the last 2 years, some maternal and child health outreach activities have been started. Health centre staff visit outlying villages to give demonstrations of improved child care practices and discuss benefits of immunization. They are also encouraging Village Health Workers to become more involved in advising mothers about ways to improve their own health and that of their children. They do not, however, conduct any surveillance of morbidity and mortality in these villages.

  No formal objectives or targets have been established for maternal and child health at this time, and no evaluation of the outcome of maternal and child health has been made. While all mothers who live either in a village which has a Village Health Worker or within 5 kilometres of a health centre can be said to have access to maternal and child health services, no coverage estimates are available.

  The majority of the staff involved in maternal and child health activities feel very committed to the provision of improved health care for children.

- Family Planning Workers

In 1976, a decision was made by the Prime Minister that Fictitia would undertake an active family planning programme. While health centre staff are involved in this effort, it is largely a single-purpose programme with its own staff and budget. Outreach efforts have thus far been limited to the Coastal and Highland Regions, the target being to reach all women between the ages of 15 and 45 in these regions.

Currently, 30% of these women are reported to be using contraceptives, and among these women there has been a marked decline in births.

While the family planning staff have a rather heavy workload, most would be willing to assist in other health programmes.

	Delta	Coastal	Highland	Mountain	TOTAL
Family Planning Workers	0	600	200	0	800

- Agricultural Extension Workers

The Ministry of Agriculture has a well-developed system of extension workers, whose primary responsibility is to advise farmers on improved agricultural practices.

There are 1 to 3 extension workers stationed in each town with a population over 15,000, and they travel extensively throughout their region. Approximately 1/4 of all villages have a resident extension worker, the majority of these being in the Coastal and Highland Regions. About 1,000 extension workers are employed throughout the country.

The Ministries of Health and Agriculture have not had joint programmes in the past.

4. Commercial System

Nearly all members of the population purchase some form of medical care, in addition to what they receive through government services. While Fictitia is still a relatively poor country economically, nearly all of the people will purchase medicines if they feel it is necessary.

	Delta	Coastal	Highland	Mountain	AVERAGE
Average Yearly Per Capita Income (in U.S. $)	$250	$600	$300	$150	$475

Many families purchase traditional and some modern medicines from local chemists or shops. A recent survey indicates that 5-7% of income is spent on the purchase of medicine through commercial channels. Although chemists exist only in cities and towns, nearly all villages have small shops or individual merchants who sell medicines. These merchants would be extremely willing to sell ORS packets if they could be assured of making a profit.

Private physicians serve less than 2% of the population of Fictitia, primarily in the Coastal Region. These 57 priviate physicians serve approximately 250,000 people, mostly from the upper and middle classes.

	Delta	Coastal	Highland	Mountain	AVERAGE
Physicians (Private practice)	3	57	5	0	65

Some traditional healers, particularly homeopaths, charge for their services. However, the populations that these traditional healers serve generally have access to health facilities or Village Health Workers also.

GLOSSARY

GLOSSARY

TERMS USED IN THESE TRAINING MATERIALS

Access - the opportunity to obtain or use something. People who have access to health services are those who can easily obtain those services.

Age-specific case fatality rate - a measure of the frequency of deaths due to a particular disease among members of a defined age group who have the disease during a given time period.

Age-specific case fatality rate may be expressed as the number of deaths per 100 cases in a defined age group (such as 5/100 3-year olds), as a percent (such as 5%), or as a decimal (such as 0.05).

Age-specific incidence rate - a measure of the frequency of new cases of disease in a defined age group during a given time period, usually a year.

Age-specific incidence rate is expressed as the number of new cases per 1,000 or 100,000 population in a defined age group (such as 500/100,000 5-year olds).

Age-specific mortality rate - a measure of the frequency of deaths in a defined age group during a given time period, usually a year.

Age-specific mortality rate is expressed as the number of deaths per 1,000 or per 100,000 population in a defined age group (such as 420/100,000 persons 15-44 years old).

Age-specific prevalence rate - a measure of the frequency of cases of disease existing in a defined age group at a specific point in time or during a given time period.

Age-specific prevalence rate is expressed as the number of cases existing per 1,000 or per 100,000 population in a defined age group (such as 50/100,000 5-year olds).

Assessment - an analysis or appraisal of something.

In this course, an assessment of current and potential providers of health care is conducted to select those providers suitable for delivering EPI services.

Attack rate - a measure of the frequency of new cases of disease in narrowly defined populations (in terms of age, sex, etc.) during a short term interval, as in an epidemic.

Attack rate may be expressed as the number of cases per 100 population (such as 3/100), as a percent (such as 3%), or as a decimal (such as 0.03).

Case fatality rate - a measure of the frequency of deaths due to a particular disease among members of a population who have the disease during a given time period.

Case fatality rate may be expressed as the number of deaths per 100 cases (such as 10/100), as a percent (such as 10%), or as a decimal (such as 0.1).

Child spacing - the practice of spacing pregnancies a few years apart.

Control measure - a strategy which is designed to either prevent cases of a health problem from occurring, and/or prevent death or serious complications of such cases.

For example, measles immunization is a control measure which can prevent a case of measles; drug treatment is a control measure which can prevent chronic lung disease, a serious complication of lower respiratory infection.

Coverage - the extent of the population which receives something that it needs.

Coverage in an immunization programme is the number or the percentage of children in the target population who have been administered vaccine.

Criterion (plural, criteria) - a standard or measure on which a decision may be based.

In this course, decisions on the importance of a health problem are based on the criteria of incidence, mortality, and disability.

Crude birth rate - a measure of the frequency of live births in a defined population during a given time period, usually a year.

Crude birth rate may be expressed as the number of live births per 1,000 population (such as 30/1,000) or as a decimal (such as 0.03).

Dehydration - condition resulting from abnormal loss of body fluids (that is, an abnormal loss of water and electrolytes).

Delivery system - the manner in which personnel, and the facilities, equipment, and supplies which enable them to do their work, are organized to deliver health care to a specified population.

For example, the hospital and health centre staffs, the buildings, the equipment, and the supplies used at these facilities are organized in the health facility system to deliver health care.

Dispensary - See Health facility.

Epidemic - occurrence of cases of a disease clearly in excess of the number normally expected in a community or region.

Outbreak - a term often used instead of epidemic, outbreak implies fewer cases in a smaller population group.

Epidemiologist - a specialist who identifies disease trends and causes of those trends in order to help prevent and control diseases in a population.

Evaluation - comparing what has been achieved to what was expected to be achieved.

Evaluation of the extent to which an immunization programme's targets are achieved makes it possible to identify problems and improve the programme in the future.

Feasibility - likelihood of being successfully completed.

The technical feasibility of a control measure is higher if the implementation of the control measure does not require special equipment or highly trained personnel.

The economic feasibility of a control measure is higher if the control measure is not expensive to implement.

Feedback - information provided by others, such as a supervisor, on the way a person is performing a task.

Feedback informs a worker of tasks (s)he is doing well and should continue, as well as ways to improve work on other tasks.

Flowchart - a diagramme showing the step-by-step progression through a procedure or system.

Health centre - see Health facility.

Health facility - a facility which provides inpatient or outpatient health services.

In Fictitia, there are 3 kinds of health facilities: hospitals, health centres, and dispensaries.

Dispensary - a small health facility, often staffed by only one worker with limited training, which provides a limited geographic area with outpatient preventive and curative services.

Health centre - a type of health facility which may be staffed by health care workers with varying degrees of medical training such as midwives, nurses, and physicians. A health centre serves a larger geographic area than a dispensary and provides inpatient care as wel as outpatient preventive and curative services.

Hospital - a type of health facility which is staffed by highly skilled health care workers who use complex techniques and equipment in the treatment of disease; a hospital provides outpatient and inpatient curative services to a larger geographic area than a health centre.

Hospital - see Health facility.

Implement - to carry out or put into practice the tasks or activities involved in a project, programme, or strategy.

A national health programme should be thoughtfully planned before being implemented.

Incidence - the number of new cases of a health problem in a defined population during a given time period.

Incidence is expressed as an absolute number (such as 30 cases).

Incidence rate - a measure of the frequency of new cases of a disease in a defined population during a given time period, usually a year.

Incidence rate is expressed as the number of new cases per 1,000 or per 100,000 population (such as 30/1,000 or 30/100,000).

Infant mortality rate - a measure of the frequency of deaths of infants less than 1 year of age during a given time period, usually a year.

Infant mortality rate is expressed as the number of deaths in the first year of life per 1,000 live births during the specified year (such as 12/1,000).

Integrate - to combine into one group with shared resources and a common purpose.

In a primary health care system, efforts directed toward controlling one priority health problem are integrated with efforts to control other health problems.

Job aid - a tool such as a checklist, chart, poster, etc., which is used on the job to help a person perform his work correctly.

Maintenance - keeping something in good condition.

Maintenance of cold chain systems might include defrosting a refrigerator.

Module - a single unit of instruction which is designed for a specified purpose.

This course is made up of units of instruction called modules.

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Monitor - to follow up day-to-day the progress made in implementing a programme to ensure that the operations are proceeding according to plan, and to keep track of milestones achieved, personnel matters, supplies and equipment, and money spent in relation to available resources.

Monitoring thus makes it possible to apply immediate corrective measures if the activities do not stay on course or do not keep to schedule.

Morbidity - sickness/illness.

Mortality - the number of deaths from a health problem in a defined population during a given time period.

Mortality is expressed as an absolute number (such as 250 deaths).

Mortality rate - a measure of the frequency of deaths in a defined population during a given time period, usually a year.

Mortality rate is expressed as the number of deaths per 1,000 or per 100,000 population (such as 12/1,000).

Objective - a general statement of what one plans to achieve.

For example, an objective of an immunization programme is "reduce morbidity due to diseases preventable by immunization in children under age 5."

Obstacle - something beyond a person's control that prevents him from performing a task.

For example, lack of time, lack of money, lack of equipment, lack of authority, or lack of supplies might be obstacles to performing a task.

Oral rehydration therapy - a method of restoring body fluids in order to replace body fluids lost in diarrhoea stools. Oral rehydration therapy should be accompanied by appropriate feeding during and after diarrhoeal episodes.

Oral rehydration therapy can prevent death from dehydration in all but the most severe cases.

Outreach worker - a health care provider who travels from a fixed location to nearby areas to provide health services on an intermittent basis.

In the Expanded Programme on Immunization (EPI) in Fictitia, outreach workers administer vaccine and provide health education.

Performance problem - difference between work which should be done and work actually being done.

A performance problem is more likely to be solved if its causes are clearly understood.

Prevalence - the number of all cases of disease existing in a defined population at a specific point in time.

Prevalence is expressed as an absolute number (such as 3,000 cases).

Prevalence rate - a measure of the frequency of all cases of disease existing in a defined population at a specific point in time.

Prevalence rate is expressed as the number of cases existing per 1,000 or per 100,000 population (such as 3/1,000 or 300/100,000).

Priority - the relative importance assigned to something.

A country may choose to focus on health problems of highest priority in an effort to have the greatest possible impact on reducing morbidity and mortality.

Private physician - a health care provider who charges a fee for his/her services and who usually has legal qualifications to practice medicine.

In Fictitia, private physicians provide effective service, but serve only a very small proportion of the population.

Provider - a type of individual who delivers services to persons needing them.

For example, a health care provider in the health facility delivery system is the hospital staff.

Rehydration - restoring body fluids lost through dehydration.

Oral rehydration therapy involves restoring body fluids orally, that is, by drinking. IV therapy is another method of rehydration and involves the injection of fluids into the body.

Routine information system - a system used to collect data on a regular basis from all or most reporting sites in the area.

A routine information system for an immunization programme would probably involve regular reporting by all or most health facilities of a few basic types of data (for example, number of measles cases and deaths).

Sentinel information system - a system used to collect data from reporting sites specially selected for their representativeness, willingness, and capability to report regularly and accurately.

A sentinel information system may be used to obtain more extensive data than would be available through a routine information system.

Surveillance - systematic data collection and analysis for action.

In these modules, disease surveillance includes collection and analysis of data on morbidity and mortality in order to respond to that analysis with appropriate action, such as forwarding a report and controlling an epidemic.

Target - a quantified statement of what one plans to achieve.

- Coverage target - a target which describes the actual number of people to whom vaccines will be given.
- Disease reduction target - a target which describes the reduction in morbidity or mortality which can be expected to result from an immunization programme.
- Immunity target - a target which describes the number of people who can be expected to become immune to a disease.

Target population - the group of people to whom services are to be provided.

Traditional healer - a non-licensed health care provider who uses natural substances and methods reflecting the community's social, cultural, and religious beliefs and attitudes to care for a person's physical, mental, and social health.

Examples of traditional healers include ayurvedic practitioners, fetishist healers, and herbalists.

Undernutrition - a disorder of nutrition.

Undernutrition may result from lack of proper food or from a disease which prevents the body from utilizing the food properly.

Village health worker (VHW) - a trained village resident who has received multipurpose health training and provides health care services to other village residents.